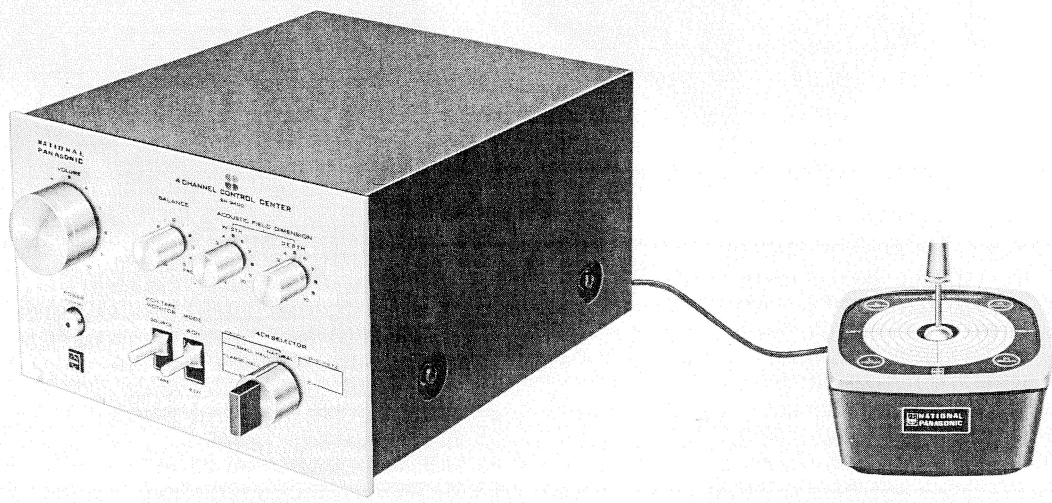
Service Manual

NATIONAL
HI-FI COMPONENTS
PANASONIC



SH-3400 SH-1010

4 CHANNEL CONTROL CENTER MODEL SH-3400

4 CHANNEL BALANCER MODEL SH-1010

Specifications (Specifications are subject to change without notice)

Model SH-3400

Rated Output Voltage & Impedance:		100 mV, 15 kΩ
Maximum Output Voltage:		2V
Input Sensitivity & Impedance:		
4CH DISCRETE		100 mV, 40 kΩ
2CH (LOW)		100 mV, 50 kΩ
2CH (HIGH)		1V, 160 kΩ
S/N (IHF, A):		
4CH DISCRETE		73 dB
2CH (LOW)		73 dB
Frequency Response:		
4CH DISCRETE		20 Hz ~ 20 kHz, $^{+0}_{-3}$ dB
2CH (LOW)		20 Hz ~ 20 kHz, $^{+0}_{-3}$ dB
Tape Monitor:		
PLAYBACK		100 mV, 50 kΩ
REC OUT		100 mV
REC/PLAY (DIN)	Input	350 mV, 200 kΩ
	Output	100 mV, 80 kΩ
4CH REC OUT		100 mV, 10 kΩ

AFD Control:	
RIGHT & LEFT	$\alpha = 0 \sim 1$
FRONT & REAR	$\beta = 0 \sim 1$
Rear Channel Phase Difference:	
NATURAL	90°
SMALL HALL	0°
LARGE HALL	180°
Power Supply:	110/120/220/240 V (50/60 Hz)
Power Consumption:	2 W
Dimensions (W × H × D):	200 × 140 × 250 mm (7 1/8" × 5 1/2" × 8 1/16")
Weight:	2.8 kg (6 lbs. 2.8 oz.)

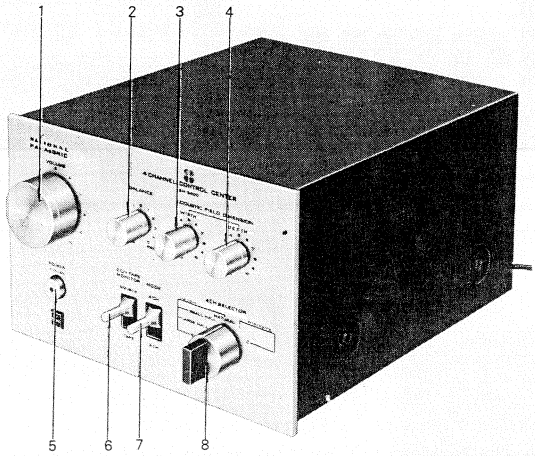
Model SH-1010

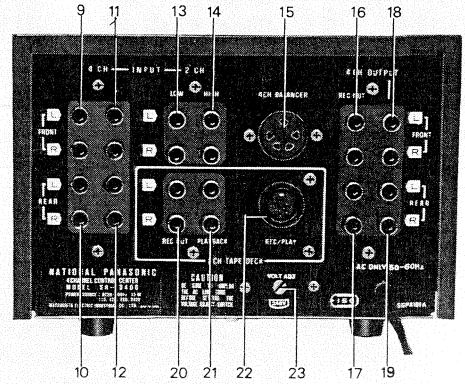
Circuit Impedance:	25 kΩ
Balance Control Range:	70 dB
Dimensions (W × H × D):	97 × 51 × 97 mm (3 13/16" × 2" × 3 13/16")
Weight:	400 g (14.11 oz.)

ORDER NO. AD-014

MATSUSHITA ELECTRIC
MATSUSHITA ELECTRIC TRADING CO., LTD.
P. O. Box 288 Central, Osaka, Japan

LOCATION OF CONTROLS





1. VOLUME CONTROL
2. FRONT-REAR BALANCE CONTROL
3. AFD CONTROL (RIGHT & LEFT) ·····α
4. AFD CONTROL (FRONT & REAR) ·····β
5. POWER SOURCE SWITCH (S_4)
6. TAPE MONITOR SWITCH (S_1)
7. 2CH-4CH MODE SWITCH (S_3)
8. 4CH SELECTOR SWITCH (S_2)
9. 4CH INPUT TERMINALS (FRONT 1)
10. 4CH INPUT TERMINALS (REAR 1)
11. 4CH INPUT TERMINALS (FRONT 2)
12. 4CH INPUT TERMINALS (REAR 2)
13. 2CH INPUT TERMINALS (LOW)
14. 2CH INPUT TERMINALS (HIGH)
15. 4CH BALANCER CONNECTION SOCKET
16. 4CH RECORDING OUTPUT TERMINALS (FRONT)
17. 4CH RECORDING OUTPUT TERMINALS (REAR)
18. 4CH OUTPUT TERMINALS (FRONT)
19. 4CH OUTPUT TERMINALS (REAR)
20. 2CH RECORDING OUTPUT TERMINALS
21. 2CH PLAYBACK TERMINALS
22. TAPE MONITOR REC/PLAY SOCKET
23. VOLTAGE SELECTOR SWITCH (S_5)

TO REMOVE PANEL

1. To remove the front panel, five (5) control knobs from front view should be first removed.
2. Remove four (4) cabinet-mounting screws. [XSB4 +10KS]
3. Remove cabinet from chassis.
4. Remove four (4) chassis-mounting screws, nos. ①～④, as illustrated in fig. 1. [XTV3D8C]
5. To remove the bottom board, remove four (4) chassis-mounting screws, nos. ⑤～⑧, as illustrated in fig. 1. [XTB4 +8BR]

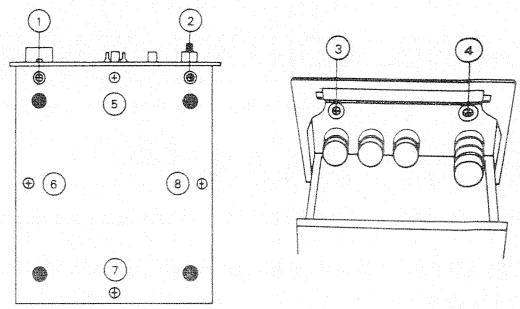
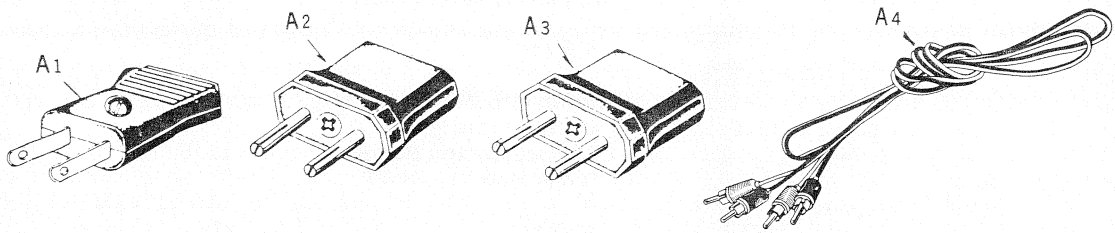


Fig. 1

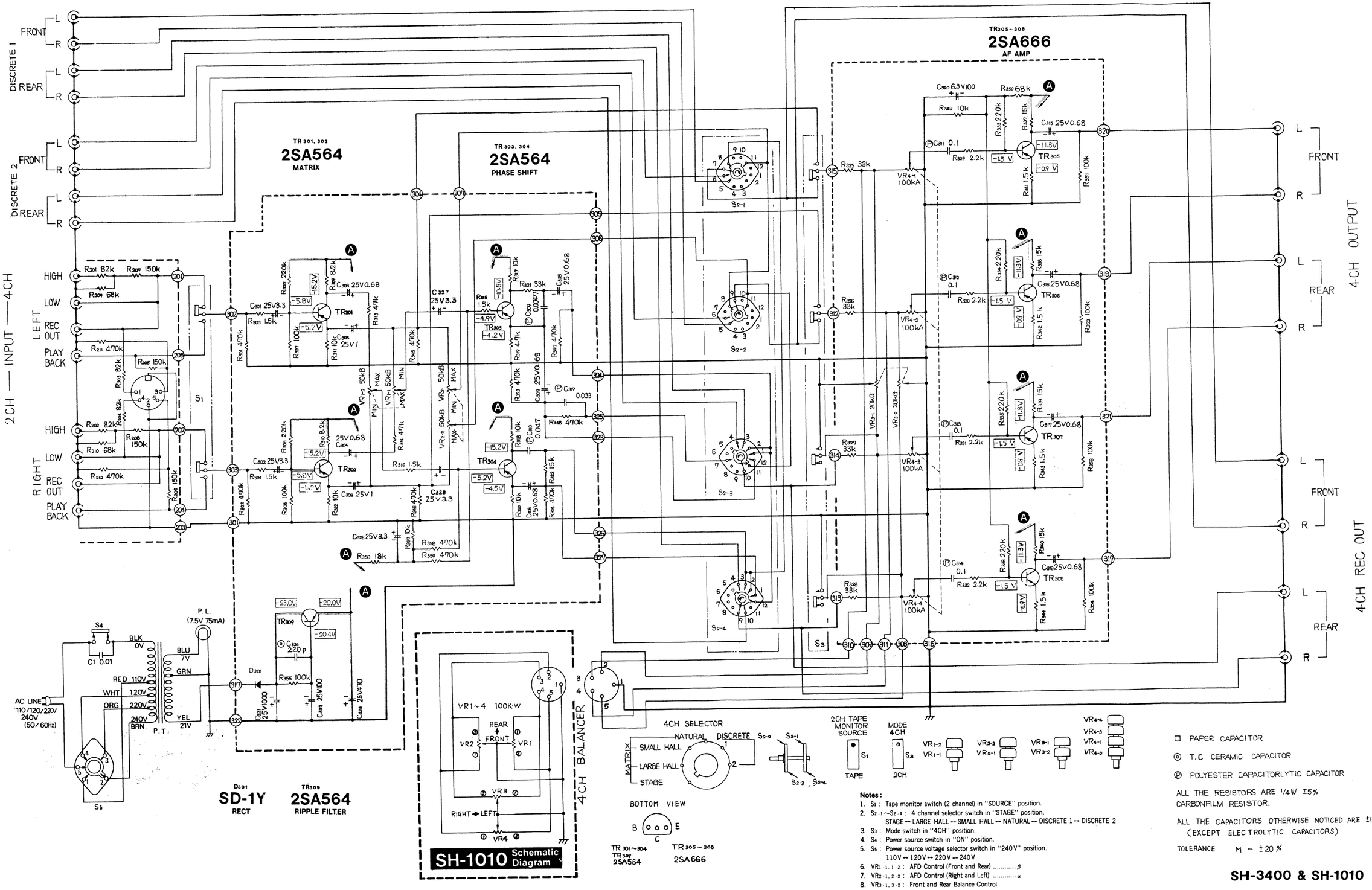
ACCESSORIES



Schematic Diagram Model SH-3400 & SH-1010

(This schematic diagram may be modified with development of technology.)

⊖B Voltage Line



□ PAPER CAPACITOR

◎ T.C CERAMIC CAPACITOR

Ⓟ POLYESTER CAPACITORLYTIC CAPACITOR

ALL THE RESISTORS ARE 1/4W ±5% CARBONFILM RESISTOR.

ALL THE CAPACITORS OTHERWISE NOTICED ARE ±10%. (EXCEPT ELECTROLYTIC CAPACITORS)

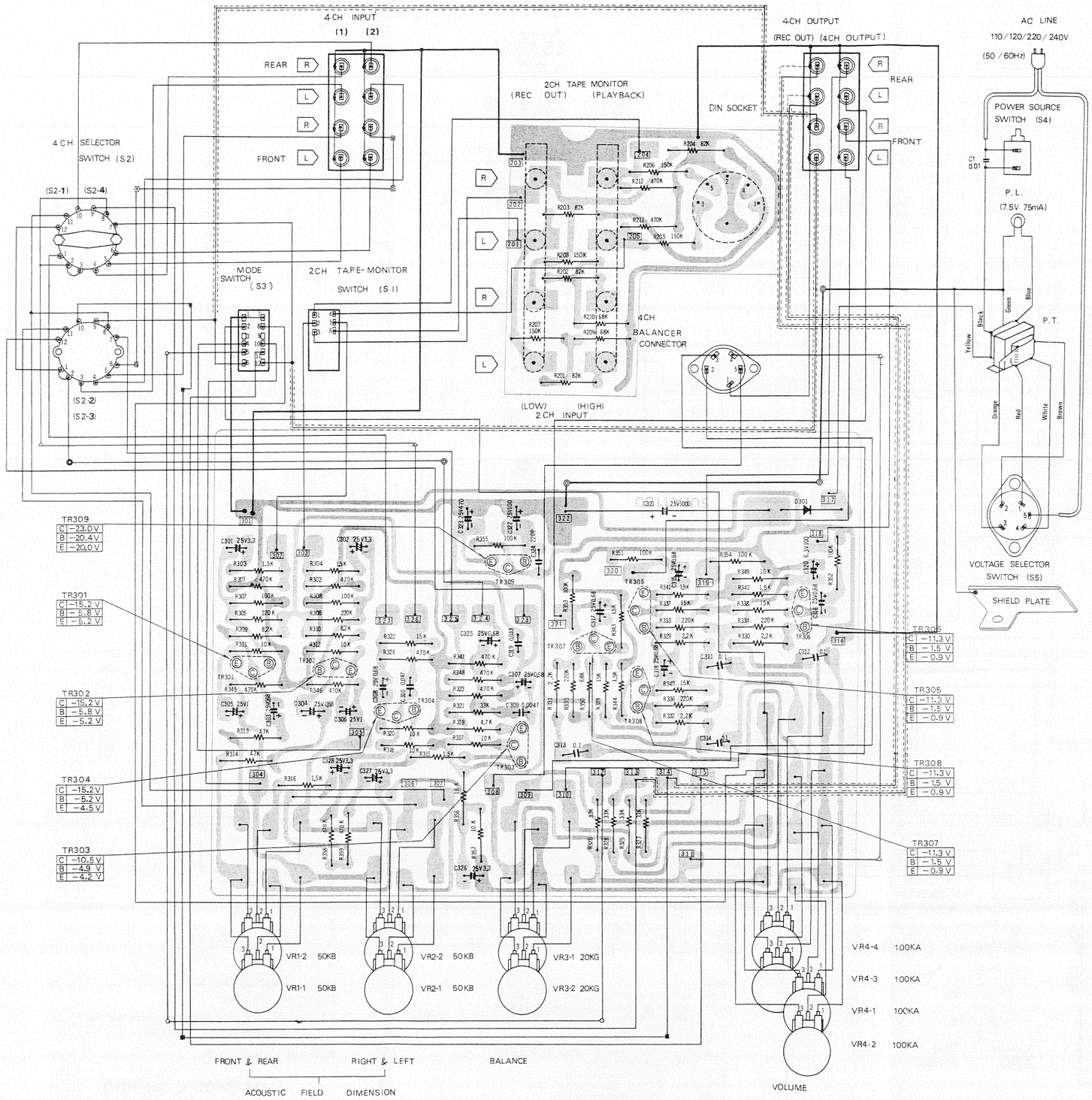
TOLERANCE M = ±20%

Notes :

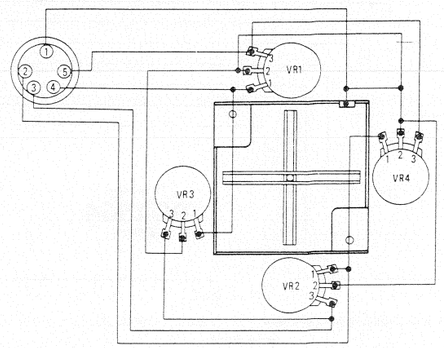
1. S_1 : Tape monitor switch (2 channel) in "SOURCE" position.
2. $S_{2\text{-}1}$~$S_{2\text{-}4}$: 4 channel selector switch in "STAGE" position.
   STAGE ↔ LARGE HALL ↔ SMALL HALL ↔ NATURAL ↔ DISCRETE 1 ↔ DISCRETE 2
3. S_3 : Mode switch in "4CH" position.
4. S_4 : Power source switch in "ON" position.
5. S_5 : Power source voltage selector switch in "240V" position.
   110V ↔ 120V ↔ 220V ↔ 240V
6. $VR_{1\text{-}1,1\text{-}2}$: AFD Control (Front and Rear) ..... β
7. $VR_{2\text{-}1,2\text{-}2}$: AFD Control (Right and Left) ..... α
8. $VR_{3\text{-}1,3\text{-}2}$: Front and Rear Balance Control
9. $VR_{4\text{-}1}$~$_{4\text{-}4}$: Volume Control

Circuit Board Wiring View Model SH-3400

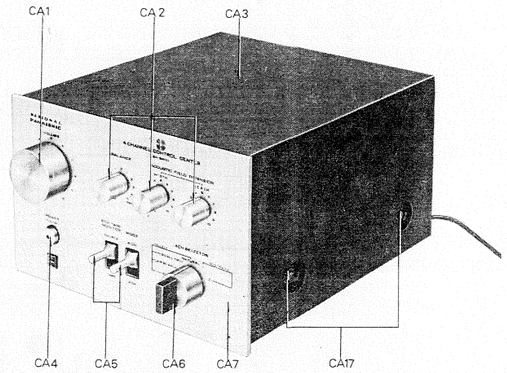
Earth Line ⊖ B Voltage Line

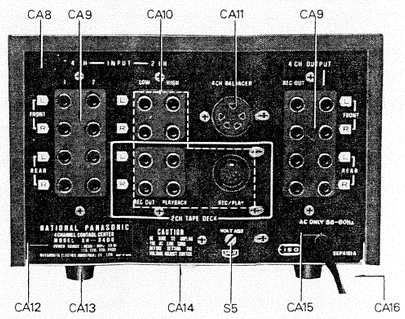


Wiring View Model SH-1010

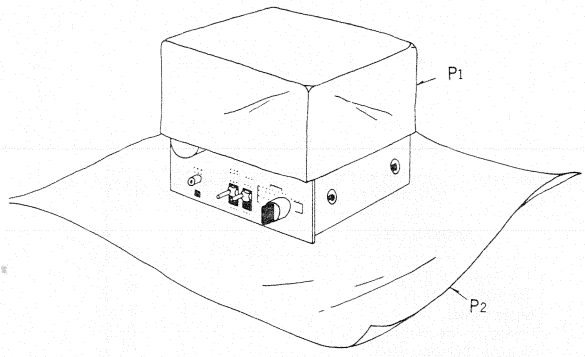


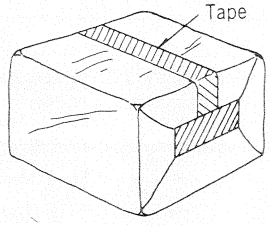
■ CABINET PARTS LOCATION (Model SH-3400)

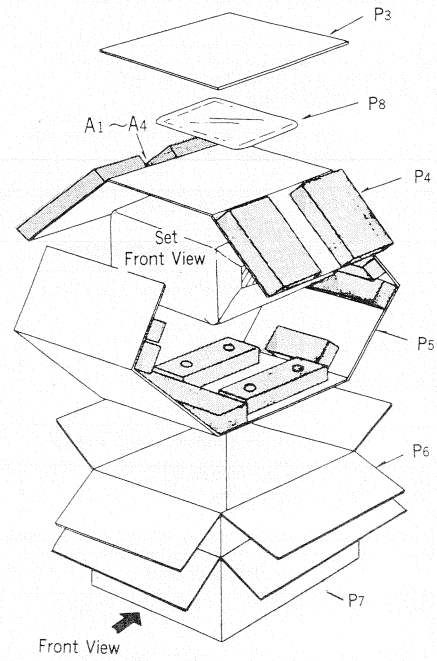




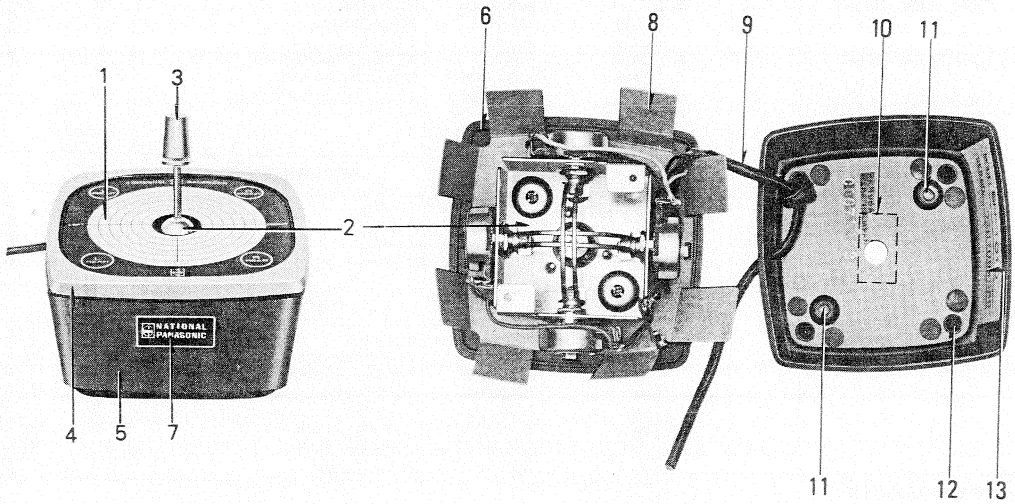
■ PACKING PARTS LOCATION (Model SH-3400)

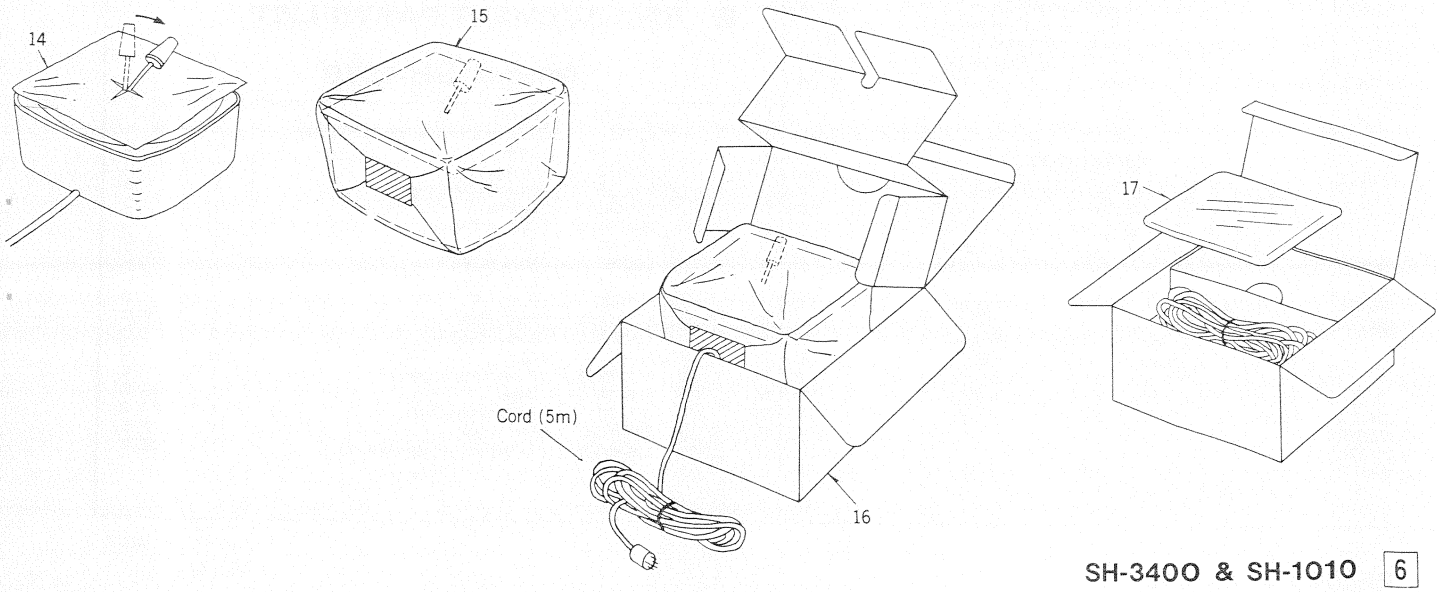






■ CABINET PARTS & PACKING PARTS LOCATION (Model SH-1010)





■ REPLACEMENT PARTS LIST (Model SH-3400)

NOTES :

1. Part numbers are indicated on most mechanical parts. Please use this part number. for parts orders.
2. Ⓝ indicates the New Parts.
3. **A**～**C** rank **A** rank parts will cover 80% of repair needs.
   A＋**B** rank parts will cover 95% of repair needs.
   C rank parts are less necessary.

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
TRANSISTORS AND DIODE				
TR301,302, 303,304, 309	2SA564Q, R	Matrix, Phase Shift and Ripple Filter	5	A
TR305,306, 307,308	2SA666P, Q	AF Amplifier	4	A
D301	RVDSD-1Y	Rectifier	1	A
TRANSFORMER AND LIGHT				
	SLTA513	Power Transformer	1	Ⓝ A
	XAM37T150	Light, Power	1	A
RESISTORS				
R303,304,315, 316,341,342, 343,344	ERD14TJ152	1.5Kohm, 1/4W, ±5%, Carbon	8	B
R329,330,331, 332	ERD14TJ222	2.2Kohm, 1/4W, ±5%, Carbon	4	B
R319	ERD14TJ472	4.7Kohm, 1/4W, ±5%, Carbon	1	B
R309,310	ERD14TJ822	8.2Kohm, 1/4W, ±5%, Carbon	2	B
R311,312,317, 318,320,349, 357	ERD14TJ103	10Kohm, 1/4W, ±5%, Carbon	7	B
R322,337,338, 339,340	ERD14TJ153	15Kohm, 1/4W, ±5%, Carbon	5	B
R356	ERD14TJ183	18Kohm, 1/4W, ±5%, Carbon	1	B
R321,325,326 327,328	ERD14TJ333	33Kohm, 1/4W, ±5%, Carbon	5	B
R313,314	ERD14TJ473	47Kohm, 1/4W, ±5%, Carbon	2	B
R209,210,350	ERD14TJ683	68Kohm, 1/4W, ±5%, Carbon	3	B
R201,202,203, 204	ERD14TJ823	82Kohm, 1/4W, ±5%, Carbon	4	B
R307,308,351, 352,353,354, 355	ERD14TJ104	100Kohm, 1/4W, ±5%, Carbon	7	B
R205,206,207 208	ERD14TJ154	150Kohm, 1/4W, ±5%, Carbon	4	B
R305,306,333, 334,335,336	ERD14TJ224	220Kohm, 1/4W, ±5%, Carbon	6	B
R211,212,301, 302,323,324, 345,346,347, 348,358,359	ERD14TJ474	470Kohm, 1/4W, ±5%, Carbon	12	B
VARIABLE RESISTORS				
VR1-1,1-2,2-1, 2-2	EVFT9AL30B54	Acoustic Field Dimension Control 50Kohm (B)	2	Ⓝ A
VR3-1,3-2	EVFTTAL30G24	Balance Control, Front and Rear 20Kohm (G)	1	Ⓝ A
VR4-1,4-2,4-3, 4-4	EVB86AL30A15	Volume Control 100Kohm (A)	1	Ⓝ A
CAPACITORS				
C324	ECCD05221K	220mmf, 50WV, ±10%, Ceramic	1	C
C309	ECQG05472KZN	0.0047mfd, 50WV, ±10%, Polyester	1	C
C319	ECQG05333KZN	0.033mfd, 50WV, ±10%, Polyester	1	C
C310	ECQG05473KZN	0.047mfd, 50WV, ±10%, Polyester	1	C
C311,312,313, 314	ECQG05104KZN	0.1mfd, 50WV, ±10%, Polyester	4	C
C301,302,326, 327,328	ECEA25V3R3	3.3mfd, 25WV, Electrolytic	5	B
C320	ECEA6V100	100mfd, 6.3WV, Electrolytic	1	B
C322	ECEA25V100	100mfd, 25WV, Electrolytic	1	B
C323	ECEA25V470	470mfd, 25WV, Electrolytic	1	B
C321	ECEB25V1000	1000mfd, 25WV, Electrolytic	1	B
C303,304,307, 308,315,316, 317,318,325	ECAG25ER68L	0.68mfd, 25WV, Electrolytic	9	B
C305,306	ECSZ25EF1	1mfd, 25WV, Electrolytic	2	B
C1	ECNU4A103M	0.01mfd, 450WV, ±20%, Paper	1	C

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
SWITCHES				
S1	SSLA11S	2ch Tape Monitor Switch	1	A
S2-1～2-4	SSRA13	4ch Selector Switch	1	Ⓝ B
S3	SSLA6S	Mode Switch	1	A
S4	SSHA15S	Power Source Switch	1	Ⓝ A
S5	SSRA1	Voltage Selector Switch	1	A
CABINET				
CA1	SBNA60-1	Knob, Volume Control	1	A
CA2	SBNA64-1	Knob, AFD & Balance Control	3	Ⓝ A
CA3	SKAA390	Cabinet	1	Ⓝ B
CA4	SBCA31	Button, Power Source Switch	1	A
	SMZA6091	Rubber Cushion, Light	1	C
CA5	SBNA61	Knob, 2ch Tape Monitor & Mode Switch	2	A
CA6	SBNA58	Knob, Matrix 4ch Selector Switch	1	A
CA7	SGWA820	Panel	1	Ⓝ B
CA8	SGPA101A	Rear Panel	1	Ⓝ B
CA9	SJFA3802	Terminal, 4ch Input & Output	2	Ⓝ B
CA10	SJFA8801	Terminal, 2ch Input & Tape Monitor (PIN, DIN)	1	Ⓝ B
CA11	RJS7A	Socket, 4ch Balancer Connector	1	B
CA12	SGTA1080	Name Plate	1	Ⓝ C
CA13	SHGA929	Leg	4	C
	XSN3D12S	Screw, Leg	4	C
CA14	SKUA220	Bottom Board	1	Ⓝ C
CA15	RHR111	Bushing, AC Cord	1	C
CA16	RJA30	AC Cord, Power Source	1	B
CA17	XSB4+10KS	Screw, Cabinet M'tg.	4	C
	XTB4+8BR	Screw, Bottom Board M'tg.	4	C
ACCESSORIES				
A1	SJP15S	AC Plug	1	B
A2	RJP74	AC Plug	1	B
A3	RJP75	AC Plug	1	B
A4	SJP2129	Connector Cord	3	B
PACKINGS				
P1	SPPA21	Soft Cover	1	Ⓝ C
P2	SPHA6009	Polyethylene Sheet	1	Ⓝ C
P3	SPNA159	Top Board, Carton Box	1	Ⓝ C
P4	SPNA158	Inside Carton, Upper	1	Ⓝ C
P5	SPNA157	Inside Carton, Lower	1	Ⓝ C
P6	SPNA6070A	Carton Box, Inner	1	Ⓝ C
P7	SPGA6140A	Carton Box, Outer	1	Ⓝ C
P8	SQFA113	Printed Matter	1	Ⓝ B

■ REPLACEMENT PARTS LIST

Model SH-1010

1	SGKA101	Panel	1	Ⓝ C
2	SJLA2	Volume & Mechanism (Complete)	1	Ⓝ A
3	SBZA68	Knob	(1)	Ⓝ C
4	SGXA32	Ornament	1	Ⓝ C
	RKA90B	Cabinet (Complete)	1	B
5	RKM96B	Cabinet	(1)	C
6	RKF65A	Cabinet, Cap	(1)	C
7	SGBA41	Badge	1	Ⓝ C
8	SMCA61	Plate, Shield	1	Ⓝ C
9	W4PESE	Cord, Shield	520cm	Ⓝ C
	RJP14A	Plug	1	B
10	SGTA1130	Name Plate	1	Ⓝ C
11	XTV3D8CK	Screw, Cabinet	2	C
12	RHG307A	Leg	4	C
13	SQXA6003	Paper, Serial Number	1	C
14	RPH71A	Sheet	1	Ⓝ C
15	RPP267	Polyethylene Cover	1	Ⓝ C
16	SPNA10A	Carton Box	1	Ⓝ C
17	SQXA5072	Operating Instructions Book	1	Ⓝ B

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